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On the Oriental genus *Neoalardus* DISTANT 1912 (Heteroptera: Veliidae)

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A b s t r a c t : The genus *Neoalardus* DISTANT 1912 and the single known species *Neoalardus typicus* (DISTANT 1903) are redescribed and figured. New data on the distribution are presented.

K e y w o r d s : Veliidae, Microveliinae, *Neoalardus typicus*, redescription, distribution, China, Laos, Thailand, Indonesia.

Introduction

The subfamily Microveliinae, which is distributed world-wide, includes more than 200 species, most of them (about 170 species) presently included in *Microvelia* WESTWOOD 1833; many species are still undescribed. The Oriental fauna is very rich in different phylogenetically old clades of Microveliinae, partly of generic rank, and partly subsumed under *Microvelia* s.l. Several studies on these clades will be made by Christine Hecher (Vienna) and the author to prepare a cladistic analysis of the Microveliinae genera. This study deals with the monospecific genus *Neoalardus*.

Neoalardus typicus (DISTANT 1903) was described under the new generic name *Alardus* from a single macropterous female from "Malay Peninsula: Province Wellesley" (DISTANT 1903). Later, DISTANT (1912) replaced the pre-occupied generic name by the name *Neoalardus*. Then, for seventy years, *Neoalardus* was not treated in the literature.

ANDERSEN (1982) gave an excellent habitus illustration of a macropterous male of *Neoalardus typicus* (fig. 242) and two drawings of an apterous male: dorsal view of body (fig. 271) and dorsal view of male genital capsule (fig. 352). Further, ANDERSEN (1982) recorded this species from India and Southeast Asia, namely from Thailand (fig. 615: map), and gave the first notes on the preferred habitats of the species: "living on moist sand and mud along a small stream, usually in deep shade from rocks". ANDERSEN (1989) compared twelve diagnostic characters of several Old World genera of Microveliinae, including *Neoalardus* (misspelled as "Neolardus", also partly in ANDERSEN 1982). HANBOONSONG & al. (1996) recorded *N. typicus* from Ubon Ratchathani Province in Northeast Thailand.

Neoalardus is a genus of the Microveliini ŠTYS 1976 with numerous primitive characteristics. It shares several characters with the Oriental genera *Baptista* DISTANT 1903 and *Lathriovelia* ANDERSEN 1989.

This paper presents a detailed description, a generic diagnosis, illustrations of some genetically and specifically important characters, and new records of this rarely collected species.

***Neoalardus* DISTANT 1912**

Neoalardus DISTANT 1912: 471 (replacement name for *Alardus* DISTANT 1903)

T y p e s p e c i e s : *Alardus typicus* DISTANT 1903 (by monotypy)

D i a g n o s i s : rather large, slender, elongate Microveliinae; head posteriorly produced, inserted in a deep emargination of the anterior margin of pronotum (Figs. 1, 2); antenna long and slender, with filiform segments 3 and 4 (Fig. 6); propleura anteriorly produced; legs long and slender, foreleg of both sexes unmodified (Fig. 3); protibia without grasping comb in both sexes; claws preterminal; forewing with four large cells (Fig. 4); abdomen of both sexes elongate, otherwise unmodified; left and right paramere of same shape, medium-sized, with dorsal tooth (Fig. 9); gonocoxae of female uncovered, directed postward; tergite 8 and proctiger of female directed posteriad (Fig. 5).

C o m p a r a t i v e n o t e s : A comparison with other genera has already been presented by ANDERSEN (1989: tab. 1). The modifications of head insertion and anterior part of pronotum are typical for the genera *Neoalardus*, *Baptista*, *Lathriovelia*, *Gracilovelia* POISSON 1948, *Tenagovelia* KIRKALDY 1908, and an undescribed genus with a few species from Borneo (descriptions in preparation). From all those genera as well as from other Microveliinae (except a few *Microvelia* species), *Neoalardus* differs in the absence of a grasping comb on the protibia of male, which is probably a reduction, as the grasping comb is in all probability an autapomorphy of the Veliidae (ANDERSEN 1982).

P h y l o g e n y : A cladistic analysis of Microveliinae has so far not been made, and consequently the plesiomorphic or apomorphic state of characters can only be presumed, not stated with certainty. Long antennae and legs, the wing venation, the long and symmetrical parameres of the male, and the uncovered gonocoxae of the female are probably plesiomorphic characters within Microveliinae, because they are found in several "primitive" genera probably at the "base" of the Microveliinae. The characteristic head insertion is typical for a few genera (see above), but may be plesiomorphic, apomorphic, or convergently developed. The extremely elongate body shape and the reduction of a grasping comb in the male are so far the only two characters which can be regarded as autapomorphies with some certainty.

***Neoalardus typicus* (DISTANT 1903) (Figs. 1-9)**

Alardus typicus DISTANT 1903: 475.

Neoalardus typicus: DISTANT 1912: 471; ANDERSEN 1982: 133, 137, 148, 176, 270, 365; ANDERSEN 1989: 366; HANBOONSONG & al. 1996: 22.

M a t e r i a l e x a m i n e d : holotype (macropterous female): "Type" [printed on round, red circled label], "Alardus\ maculatus\ Dist." [in Distant's handwriting], "Prov. Wellesley.\ H.N. Ridley.\ 96 . 23" [printed], "This species was apparently\ wrongly labelled and was\ actually described in A.M.N.H. XII. 1903 p.475 as\ Alardus typicus Dist." [handwriting unknown] (in The Natural History Museum, London); further material (all in Natural History Museum Vienna): 1 ♂ (macropterous) "THAILAND: Ubon Ratchathani\ Prov., Piboon\ 16.3.1996\ leg. Yupa

Hanboonsong (4)": 1 ♂ (macropterous) "N-Laos: 240 km N Vientiane\ 10km N Luang-Prabang\ Mekhong riv. area, 250m\ lg.Insomsay Sonsy, XI.1992"; 1 ♀ (apterous) "CHINA: Hainan (190)\ 4km W Gióngzhong\ 150m, 16.1.1996\ leg. Jäch"; 1 ♂ (macropterous) "N-SUMATRA: Aek Tarum\ 99°18'30"E 2°40'32"N\ 21.2.1994, 180m\ leg. Malicky".

Description

Macropterus female (holotype): body length 4.88 mm; maximal body width (at humeri of pronotum) 1.28 mm; length of second antennal segment 0.59 mm; length of metatibia 1.98 mm; body slender elongate, with very long appendages.

Colour: dorsal surface yellowish brown; pronotum laterally and connexiva yellow; wings brownish with white spots, one large basally and three smaller in distal half; ventral surface mainly blackish, acetabula yellowish; antennae light brownish; legs yellowish, with brownish annulations in distal part of femora and at base of tibiae.

Pilosity: whole body including antennae and legs covered by a double hair layer, consisting of sparse, very long, erect hairs, and dense appressed hairs, these relatively long compared with those of other Microveliinae. Forewing with rows of erect hairs along basal and anterior veins; tergite 8 with silverish hairs along midline.

Structural characters: head 0.85 times as long as wide, posteriorly produced, extended well behind posterior eye margin (Fig. 1, 2), only slightly deflected in front of eyes; eye width 0.25 times head width; rostrum reaching to anterior margin of mesocoxa; antenna very long and slender, segments 3 and 4 more slender than segments 1 and 2; relative lengths of antennal segments 1-4 (segment 2 = 1): 1.2 : 1 : 1.1 : 1.1 (Fig. 6).

Pronotum anteriorly concave, posteriorly produced and forming medioposteriorly a distinct angle, with slightly elevated midline and with pronounced humeri (Fig. 2); pronotum width 1.0 times length of pronotum along midline; wings not reaching apex of abdomen (Fig. 5); wing venation as in Figure 4; legs long and slender; relative lengths of leg segments (metatibia = 100): profemur: 68; protibia: 60; protarsus: 28; mesofemur: 78; mesotibia: 75; mesotarsus: 25+20; metafemur: 84; metatibia: 100; metatarsus: 26+20; foreleg not modified; claws long, falcate, inserted subapically.

Abdomen very elongate, without special modifications; tergite 8 horizontally positioned; proctiger small, narrow, directed posteriad; gonocoxae relatively large and slender, simple, directed posteriad, uncovered (Fig. 5).

Macropterus male: body length 4.49-4.62 mm; maximal body width (at humeri of pronotum) 1.19-1.24 mm; length of second antennal segment 0.60-0.61 mm; length of metatibia 1.86-1.91 mm; characters as in macropterous female, except the following:

Colour of pronotum and pronotal lobe predominately blackish except yellowish midline and (sometimes) brownish disc; hemelytron with three white spots, white spot in distal medial cell lacking; relative lengths of antennal segments (segment 2 = 1): 1.2 : 1 : 1.0 : 0.95; relative lengths of leg segments (metatibia = 100): profemur: 62; protibia: 57; protarsus: 28; mesofemur: 72; mesotibia: 73; mesotarsus: 22+19; metafemur: 84; metatibia: 100; metatarsus: 26+18; legs not modified, without grasping combs (Fig. 3); compared with female's, femora only very slightly thickened.

Abdomen very elongated, in lateral view ventral outline of sternites 4-6 weakly concave; segment 8 simple, cylindrical, with posteroventral opening; pygophore simple, posteriorly rounded; proctiger small, narrow, with small, but distinct lateral wings, distally densely hirsute (Fig. 7); parameres long, symmetrical, upcurved, middle region wide and with a dorsal tooth, distally tapered, apically truncate (Fig. 9); vesicula with strongly

developed dorsal sclerite connected with an unpaired medial process, and with distinct bar-shaped lateral sclerites (Fig. 8).

Apterous female: body length 4.56 mm; maximal body width (metapleura) 1.11 mm; length of second antennal segment 0.62 mm; length of metatibia 1.96 mm; characters as in macropterous female except the following:

Colour dorsally dark as in macropterous males; tergites and medial part of laterotergites black; tergites and laterotergites with appressed short and subcumbent long hairs.

Pronotum narrow, 1.25 times wider than long, with sides in anterior three quarters subparallel, posteriorly widely rounded, with midline weakly indicated anteriorly, without humeri (Fig. 1); metanotum only laterally visible; connexiva nearly vertical; tergite 1 medially with a squared, elevated area (Fig. 1); tergite 2 with two longitudinal keels close to lateral margins; tergites 5-7 slightly longer than wide, tergite 8 slightly wider than long.

Apterous male: not available for study.

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Zusammenfassung

Die Gattung *Neoalardus* DISTANT 1912 und ihre einzige bekannte Art *Neoalardus typicus* (DISTANT 1903) werden redeskribiert und abgebildet. Neue Verbreitungsdaten werden bekannt gemacht.

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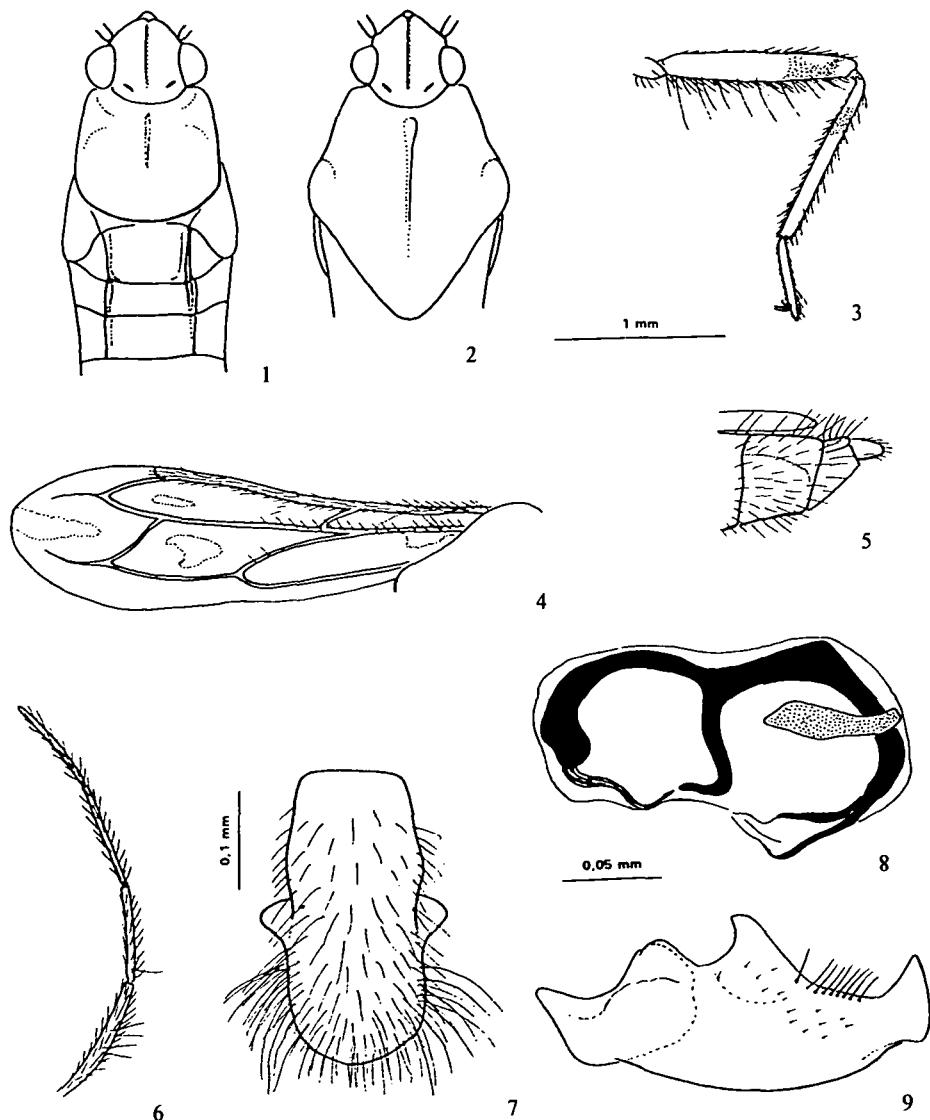
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Figs 1-9: *Neoalardus typicus* (1 - apterous female; 2, 3, 7-9: macropterous male; 4-6: holotype, macropterous female): 1, 2 - head, thorax, and base of abdomen, dorsal view (pilosity omitted); 3 - foreleg, 4 - hemelytron, 5 - posterior part of abdomen, lateral view, 6 - antenna, 7 - proctiger, dorsal view, 8 - vesicula sclerites, 9 - left paramere, lateral view.